Sibley Parkway Redevelopment

Proposed Alignment & Development Concepts

City of Mankato

I&S Engineers & Architects, Inc.
One firm - start to finish

July 10, 2006

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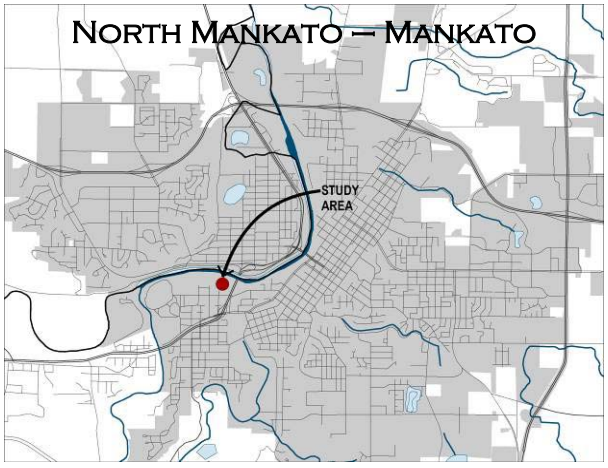
Sibley Parkway Redevelopment Project

Phase I

July 10, 2006

Introduction

The Sibley Parkway Redevelopment Project Area covers approximately 70 acres in Lower West Mankato located along the Minnesota River as shown in the figure below. The City of Mankato selected I&S Engineers & Architects, Inc. to perform preliminary design work on the Sibley Parkway Redevelopment Project and to develop alignment options for Sibley Parkway. The public improvements are intended to stimulate redevelopment of this underutilized industrial area along the River, while preserving the historic character, connecting with the environment, and providing public places.



This report presents options and design element recommendations for the redevelopment and revitalization of the area utilizing the preliminary concepts of the Sibley Parkway Redevelopment Project – Redevelopment Plan Design Guidelines (Redevelopment Plan). It advances the preliminary concepts of the Redevelopment Plan by selecting a street alignment for Sibley Parkway and examining the feasibility of providing municipal utilities. It also investigates potential environmental issues and considerations, identifies issues requiring coordination with other government and regulatory entities, and presents preliminary cost estimates for the public infrastructure portion of the project.

The project will be financed in part by a redevelopment grant from the Minnesota Department of Employment and Economic Development (MNDEED). However, due to the overall project financing considerations, the construction of Sibley Parkway will be completed in two phases. This report will serve to address Phase I of the project area and is the primary focus of this report.

Overview

Within the Sibley Parkway Redevelopment Project Area (Redevelopment Area), the proposed route of Sibley Parkway will pass through the City's Lower Westside Neighborhood, linking Downtown Mankato via South Riverfront Drive with Sibley Park. The project is a product of the City of Mankato's Strategic Plan, and is a major step toward achieving several of the goals identified in the plan. Among these are:

- Revitalization of the Downtown Area
- Promotion of orderly growth
- Preservation of natural resources and Mankato's "River City" heritage
- Strengthening of the City's existing neighborhoods
- Development of the City's multi-modal transportation to meet future needs

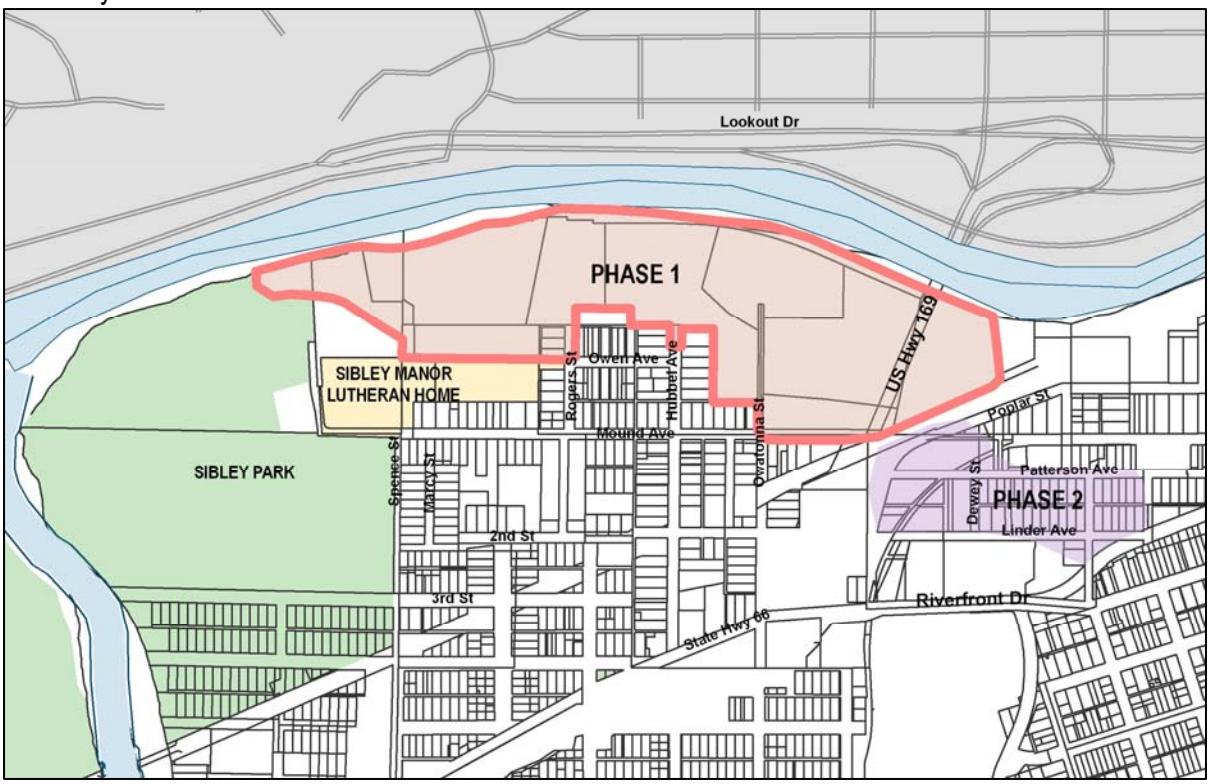
As part of the Strategic Plan implementation process, in the fall of 2005, the City held a workshop for Lower Westside residents, other concerned citizens, and outside development interests. The workshop was well attended, and led the City to commission the development of the Sibley Parkway Redevelopment Project – Redevelopment Plan and Design Guidelines (Redevelopment Plan). The Redevelopment Plan examines the existing neighborhood, articulates the vision and guiding principles that arose from these workshops, and provides design guidelines, conceptual functionalities, and design elements to inform the design of constructed improvements.

Aerial Photograph of the Lower Westside Neighborhood

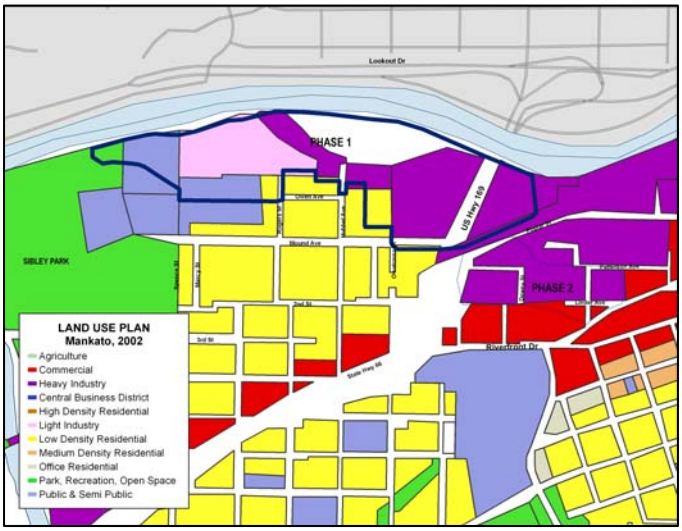
The design guidelines identified in the Redevelopment Plan outline concepts for redevelopment that unite public spaces, the existing and planned residential areas, and the natural environment. These guidelines define ways the redevelopment can enhance and support a traditional neighborhood design and a small town atmosphere that embraces the City's heritage as a river town. Sibley Parkway will have a 'Main Street' ambiance, with a well-defined Village Center composed of redevelopment areas of mixed uses.

Project Area

The Sibley Parkway Redevelopment Project Area (Redevelopment Area) has been divided into two phases for budgetary reasons, as mentioned earlier. Phase 1 encompasses the area to the west side of the Union Pacific Railroad bridge and to the east of Sibley Park, and is bounded by the Minnesota River to the north and residential use to the south. The Phase 2 boundary has not been established, but addresses the remainder of the project from the east side of the Union Pacific Railroad bridge to a potential planned connection with South Riverfront Drive to the southeast. Since this report focuses primarily on Phase 1 of the project, future references to the Redevelopment Area refer to the Phase 1 area only.



The major land uses in the Phase 1 area consist of industrial, municipal, and related uses, vacant land and vacant buildings with single-family residential adjacent to the area on the south border as seen in the figure below. The industrial uses on the site consist primarily of the old North Star Concrete facility with a vacant municipal property adjacent to the west. The Union Pacific Railroad and US HWY 169 bridges are within the east section of the project area.



Starting in the northeast corner of the Phase 1 area, the flood control levee traverses the north border until, just west of Rogers Street, where it dips south, segregating the western portion of the Phase 1 area on the river side of the levee. Historically, this area was a former aggregate mine. The mine produced aggregate for use in the production of concrete from about 1890 until sometime in the 1950's according to the City of Mankato. When mining operations ceased, the site was used both as a washout area for ready-mix trucks and as a settling pond for lime sludge produced by the City's water treatment facility. The Lime Sludge Pond (LSP) is no longer in use for lime sludge disposal. It lies within the Federal Emergency Management Agency (FEMA) Designated Floodway and is classified as a solid waste disposal site by Minnesota Pollution Control Agency (MPCA).

View of the Lime Storage Pond from the West

The project area is also characterized by a large number of intersecting and overlapping easements. These easements are illustrated on Exhibit A1 in Appendix A of this report.

Environmental and Related Considerations

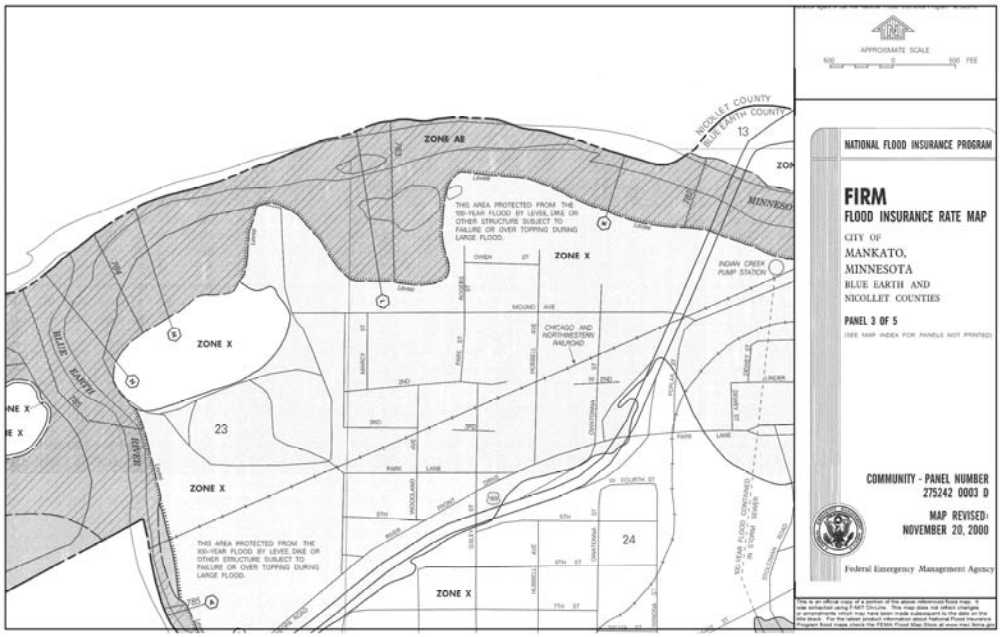
The Phase 1 redevelopment area has a number of issues that need to be addressed, including possible wetland issues, potential contamination from previous industrial activity, floodway preservation, and the closure of the LSP.

A wetland investigation was completed for the project area, and as a result, it was concluded that there are no areas that qualify as a wetland on this site according to the criteria set forth in the 1987 Army Corps of Engineers Wetland Delineation Manual (Manual). During the field investigation of the project site, the only area indicating potential wetland characteristics was the LSP. This area does meet the hydrology criteria, but does not satisfy the hydric soil criteria or the hydrophytic vegetation criteria set forth in the Manual. In addition, since the LSP is considered a landfill by the MPCA, this area will be exempt from Section 404 of the Clean Water Act; as wetlands forming on a landfill are considered exempt from the definition of "Waters of the United States".

Aerial View of the North Star Concrete Site

In 2002, American Engineering and Testing, Inc. conducted a Phase I Environmental Site Assessment (ESA) for the former North Star Concrete site for the current property owner Steve Rentz. The recommendation section of the report is included as Appendix B of this report for informational purposes only. It is not known what, if any, actions have been taken in response to the recommendations made in 2002, and it is assumed that additional Phase I ESA study may need to be performed if required, likely by the developer of the property.

The primary challenge to be addressed in relation to the closure of the LSP is satisfaction of apparently conflicting requirements. First, as stated previously, the LSP is classified as a solid waste disposal site by the Minnesota Pollution Control Agency (MPCA) based on its use for lime sludge disposal. As such, Minnesota Rules-Chapter 7035 requires the waste be compacted and covered with a minimum of two feet of compacted earth material. One characteristic of lime sludge is that it typically has a high water content, making compaction problematic in this case. Second, since the site is located within the FEMA designated floodway, rules for the preservation of floodway volume restrict the placement of fill within the floodway. Discussions are ongoing with the engineering and regulatory sections of the ACOE and MPCA to resolve these conflicting requirements.



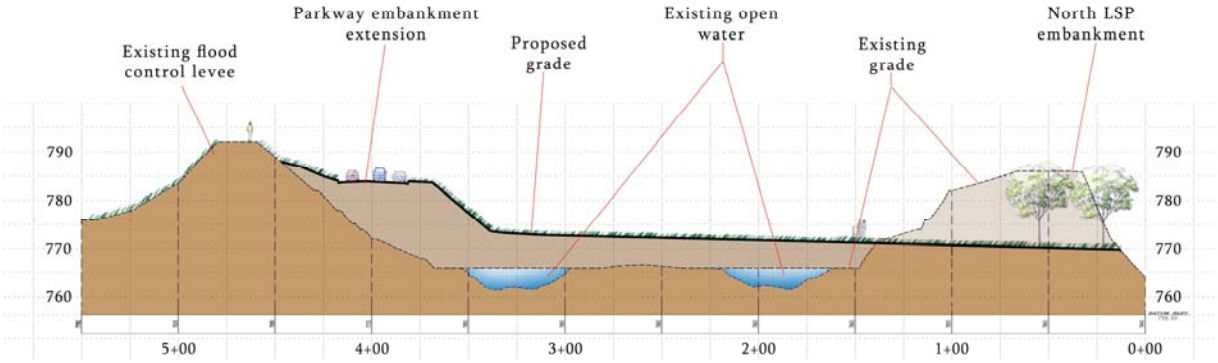
The Use of Lime in Water Treatment:

The lime softening process in water treatment is used to remove dissolved minerals and other impurities in water. Among other substances that can be present in raw water, radium (226 and 228) is also removed by lime softening. As a consequence, this substance may be present in greater concentrations in the waste lime sludge than in the raw water. Ponds used in the past for storage and settling of the sludge are classified as solid waste disposal sites by the MPCA.

Preliminary discussions with the ACOE indicate the parkway could be constructed along the levee and within the floodway provided construction of the road embankment does not adversely affect the integrity of the levee. The ACOE preference is that any widening of the levee embankment necessary to accommodate the road would be offset by the removal of an equal amount of material within the floodway in order to preserve floodway volume.

The most economical solution is to utilize the existing north embankment of the LSP as fill material for constructing the levee embankment extension for the parkway, material for capping the LSP, and as embankment and fill material elsewhere on the parkway. The LSP would be capped with approximately four feet of fill,

allowing the top two feet to be compacted. Utilizing part of the fill material elsewhere along the Parkway results in a net gain in floodplain volume. The figure below illustrates this solution.



*VERTICAL SCALE EXAGERATED 5:1

The final result of the solution is that most of the west half of the parkway is opened up to river views and approximately six additional acres of open space adjacent to the river is added to the park. The solution also addresses the closing of a solid waste disposal site, reclaiming it for public use. As such, there may be brownfield grant opportunities that could aid in the financing of the parkway project.

On May 26, 2006 I&S representatives met with Dave Studenski of the regulatory branch of the ACOE to brief him on the wetland investigation and proposed grading and capping of the LSP. This meeting included a visit to the Phase 1 project area to review the findings. During our site visit Mr. Studenski indicated that the City should consider the establishment of a natural floodplain plant community adjacent to the river in the LSP area. These plantings could provide water quality and wildlife habitat benefits similar to those provided by the plant communities adjacent to the existing open water habitat. Plantings of this sort would also be compatible with the proposed open space use of the LSP area.

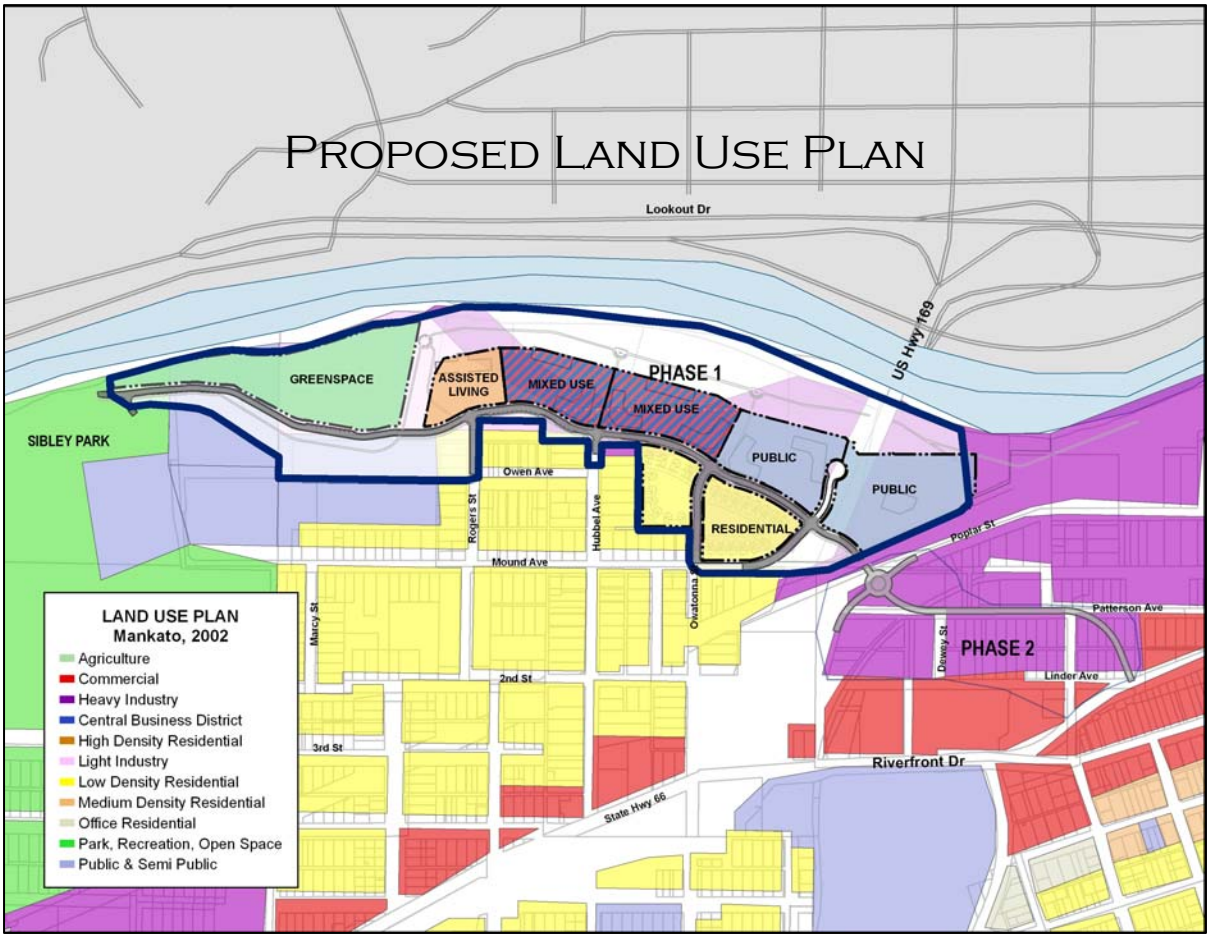
A preliminary proposed grading plan for the LSP was sent to the engineering division of the ACOE for review. Their comments indicate that in concept, the proposed solution is reasonable. Their concerns center mainly on excavation near the toe of the levee and slope stability, the ability of the existing storm drain pipe to withstand the additional fill placed on them, and modifications to three relief well structures. As the design moves forward, additional review and coordination will be necessary.

On June 14, 2006, I&S representatives met with Sherri Nachtigal and Mark Hugeback of the MPCA, and Dave Kronlokken of Blue Earth County Environmental Services to review the proposed grading and capping of the LSP. While agreeing in concept with the proposed plan, the MPCA will require a receptor survey of groundwater in the area surrounding the LSP to determine any possible impacts from the in-situ lime sludge. This could involve testing of water from shallow wells in the surrounding area, testing of water discharged from the relief wells adjacent to the levee, or testing of the water seeping into the existing overflow outlet from the LSP to the river. After review and approval of the receptor survey plan and review of the results of the survey, the MPCA will offer guidance and make recommendations for the capping of the LSP. Finally, the agency would review the proposed construction plans, and issue the proper permits for the work to be done.

Proposed Land Uses & Zoning

The planned land use of the area embraces the precepts of traditional neighborhood design as the foundation for the redevelopment. It examines not only the best economic use for a particular parcel, but the overall cohesiveness of the area and the connectivity within the context of the surrounding neighborhood and community.

The figure below illustrates the proposed land uses for the Phase 1. A combination of residential, mixed land use, and public and open space land uses are planned for Phase 1. Mixed-use provides retail sales and services within the local neighborhood in order to create a local sustainable community. Public space possibilities include a Community Center, a Center for the Performing Arts, and a number of "pocket parks".



According to the City of Mankato's Zoning Map (July 2004), the majority of the site is zoned M-2: Heavy Industrial. With the redevelopment of Phase I, the zoning will be changed to reflect the planned development of the site. Expected zoning will be a mixture of residential, office-residential, and commercial. Development will be approved via a planned unit development to allow for an optimal mix of residential and business.

Transportation Choices

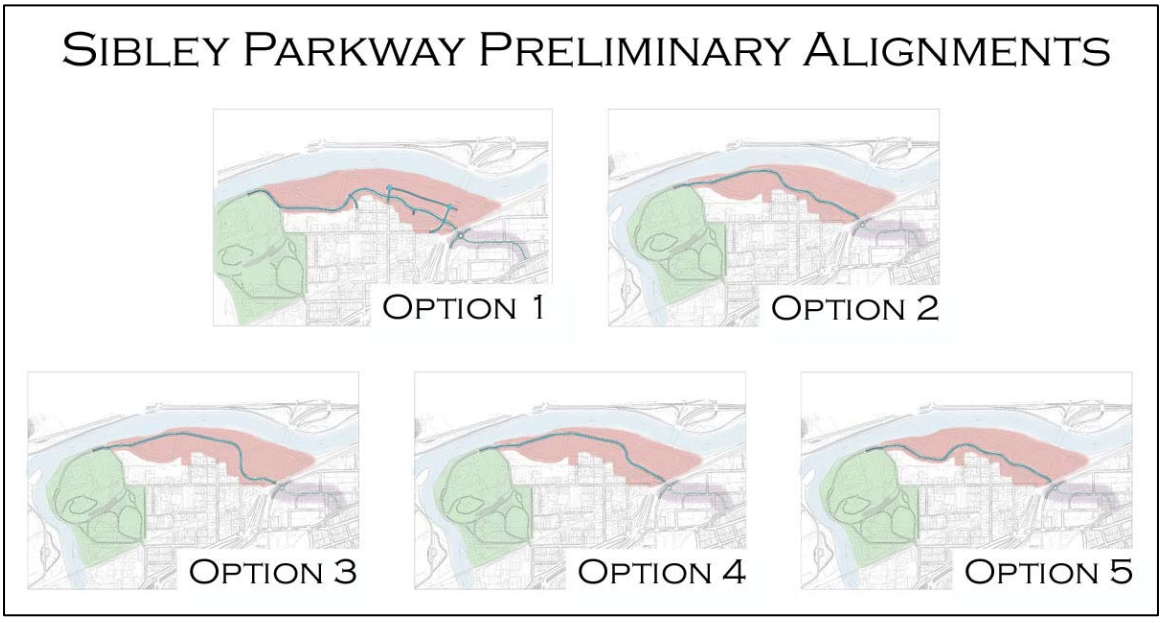
Establishment of the Sibley Parkway alignment strived to achieve a number of goals. The design challenge was to provide residents a choice of transportation modes other than automobile use in order to promote walking and biking as fundamental modes of travel from one location to another. Additional goals included providing multi-modal corridors for recreational and exercise purposes, to extend Sibley Park and the park-like landscape into the area, and to connect the park, neighborhood, and Downtown area via Riverfront Drive. The Parkway also features a narrower, curvilinear alignment designed to slow traffic, reduce vehicle accidents, and create a pedestrian-friendly environment.

Sibley Parkway Alignment Options

Sibley Parkway is designed as a gateway to the neighborhood and park area. The gateway and design elements emphasize the river town feel and traditional neighborhood design, creating a cohesive identity for the area. The Parkway will also serve as a primary path for pedestrian movement and activity.

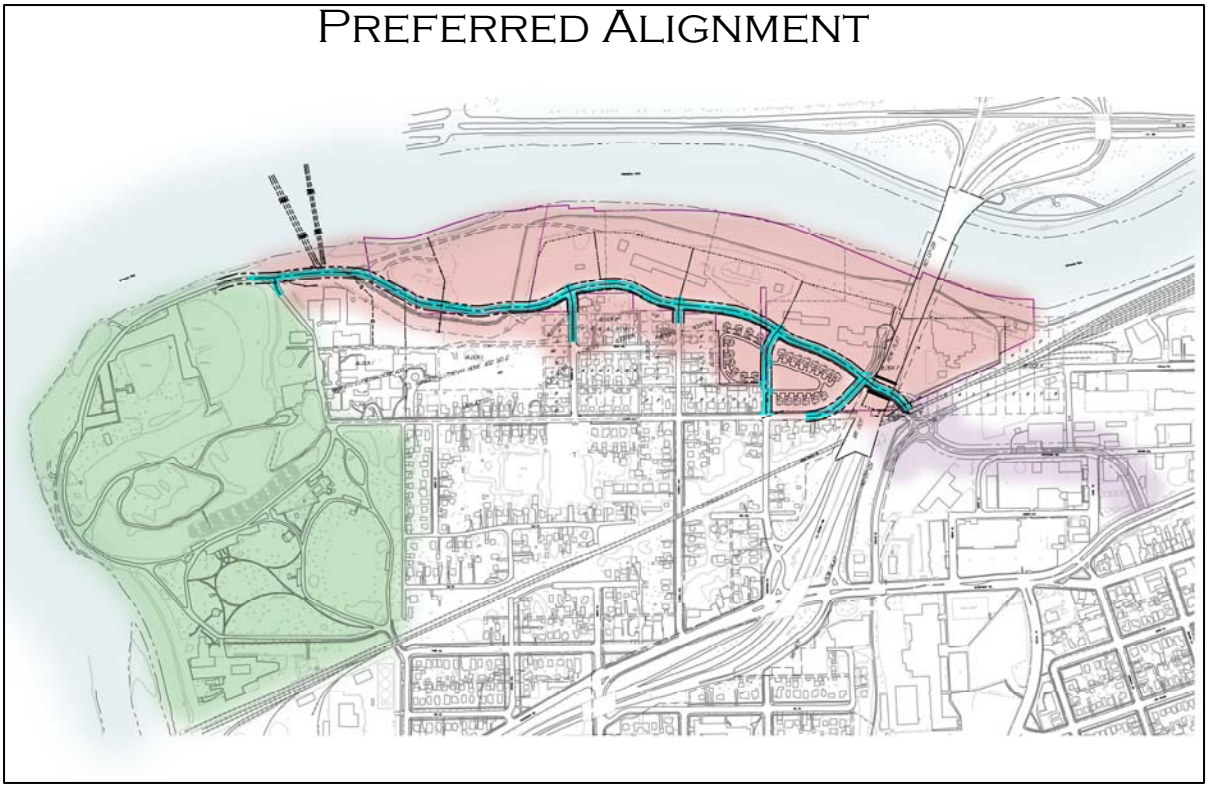
Initially, five alignment options were developed for Phase 1 of Sibley Parkway. The alignments were developed based on the design objectives, the types of land uses outlined in the Redevelopment Plan, and by the resultant redevelopment parcels defined by the alignment. The five options were evaluated based on feasibility, constructability, physical constraints, acceptable costs, and aesthetics.

Based on discussions with City Staff, Option 2 emerged as the preferred option, as it was viewed as creating the most viable parcels for development. Option 2 was refined to address the difficulties of providing the road and trail connection to Sibley Park through the area of the flood control levee and LSP.



The initial alignment options generally connected the redevelopment area (or Phase 1 East) with Sibley Park either by positioning the road on top of the levee, or on the north embankment of the LSP. As presented earlier in the discussion of Environmental and Related Considerations, the preferred option solves a number of design challenges, while creating new open space that provides access to the river. The resulting preferred alignment is pictured below. It represents a balance between adherence to the established design guidelines and physical, economic, and environmental constraints.

Preferred Alignment



With the preferred alignment option, a portion of the Parkway will run within the FEMA designated floodway. The newly reclaimed open space is within the floodway as well, and as such, it will be inundated during periods of high water, much as some areas in Sibley Park are currently. However, since the low point of the Parkway is set at an elevation of 784, one foot above the FEMA 100-year flood elevation for the Minnesota River, inundation of the roadway will rarely occur. The table below lists historic high water levels for the Minnesota River at Mankato.

Historical Crests for Mankato, MN	**Flood Stage** Gage "0" Datum: 747.9'	**Date**
778.01	30.11 ft	06/21/1993
776.99	29.09	04/10/1965
775.92	28.20	04/26/1881
775.51	27.61	04/10/1997
774.97	27.07	04/12/1969

http://www .crh.noa.gov

The figure below shows the redevelopment parcels defined by the preferred alignment. Based on the preferred alignment and proposed future land use, conceptual layouts were developed for the redevelopment parcels. The following pages present Exhibits 1-4 illustrating renderings of the preferred alignment and development concepts.

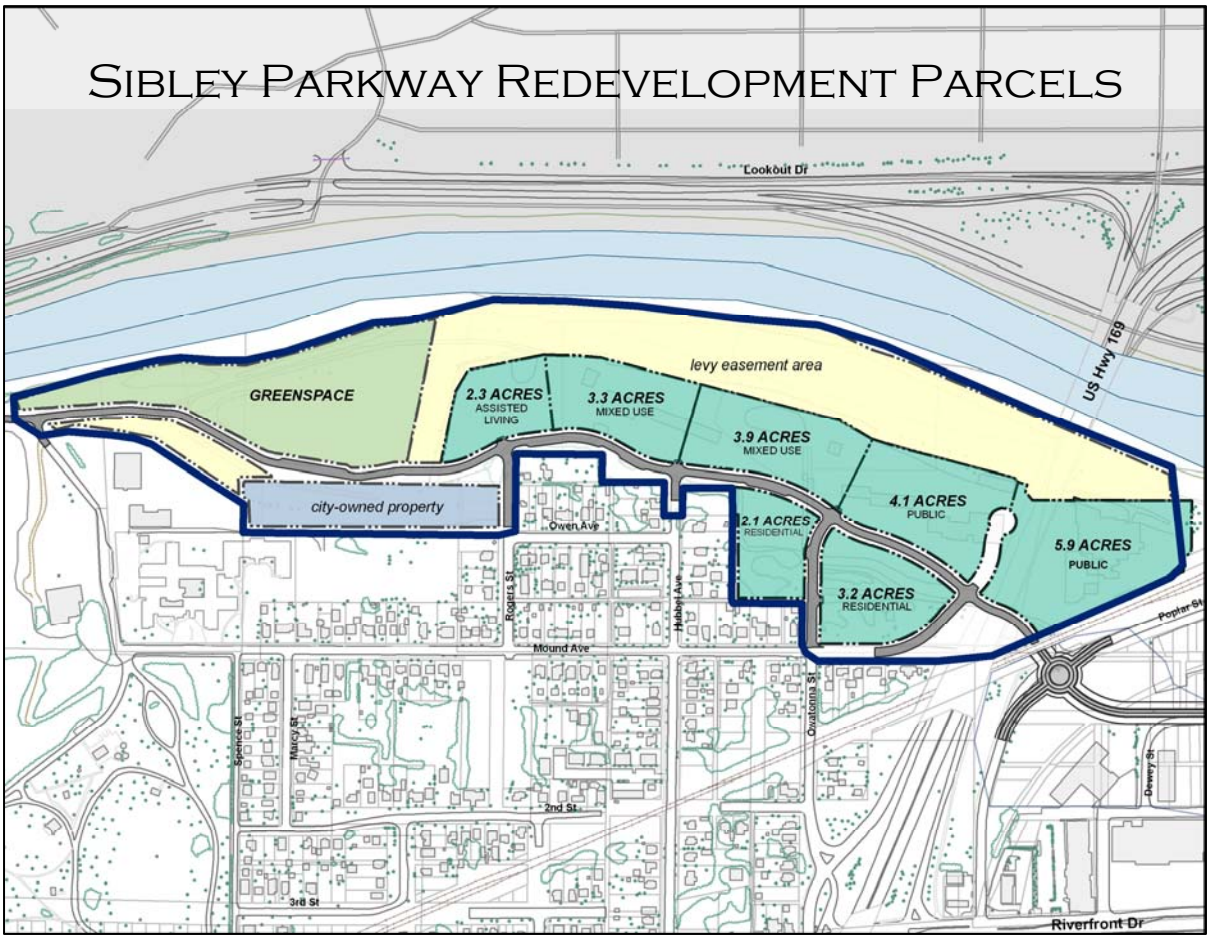


Exhibit 1 depicts three different renderings of the Phase 1 area; the first as it exists today, the second with the preferred Sibley Parkway alignment, and the third with the preferred alignment and conceptual buildings to give an idea of the proposed scale of the redevelopment.

Exhibit 2 presents a plan view rendering of the preferred alignment and redevelopment concepts with pullouts illustrating streetscape and intersection landscaping details.

Exhibit 3 presents a plan view rendering of the Phase 1 single family redevelopment areas. The units pictured are essentially detached town homes with attached two-car garages. The individual units are assumed to be 1-1/2 stories with a footprint of approximately 1100 square feet.

More detailed drawings of the Phase 1 East and West Alignment are presented in Exhibits A2 and A3 in Appendix A of this report.

EXHIBIT #1 SIBLEY PARKWAY 3D RENDERINGS

EXISTING CONDITIONS

PROPOSED SIBLEY PARKWAY

FUTURE DEVELOPMENT

MINNESOTA RIVER

PROPOSED SIBLEY PARKWAY

PROPOSED SIBLEY PARKWAY

A2

A1

U.S. HIGHWAY 169

OWEN AVE.

HUBBELL AVE.

MOUND AVE.

OHATONNA ST.

2ND AVE.

DEWEY ST

N

W E

S

A1

A2

EXHIBIT #2 - SIBLEY PARKWAY STREETSCAPE CONCEPTS

MANKATO, MN

I&S Engineers & Architects, Inc.

EXHIBIT # 3 - SIBLEY PARKWAY SINGLE FAMILY RESIDENTIAL CONCEPT

MANKATO, MN

I&S Engineers & Architects, Inc.

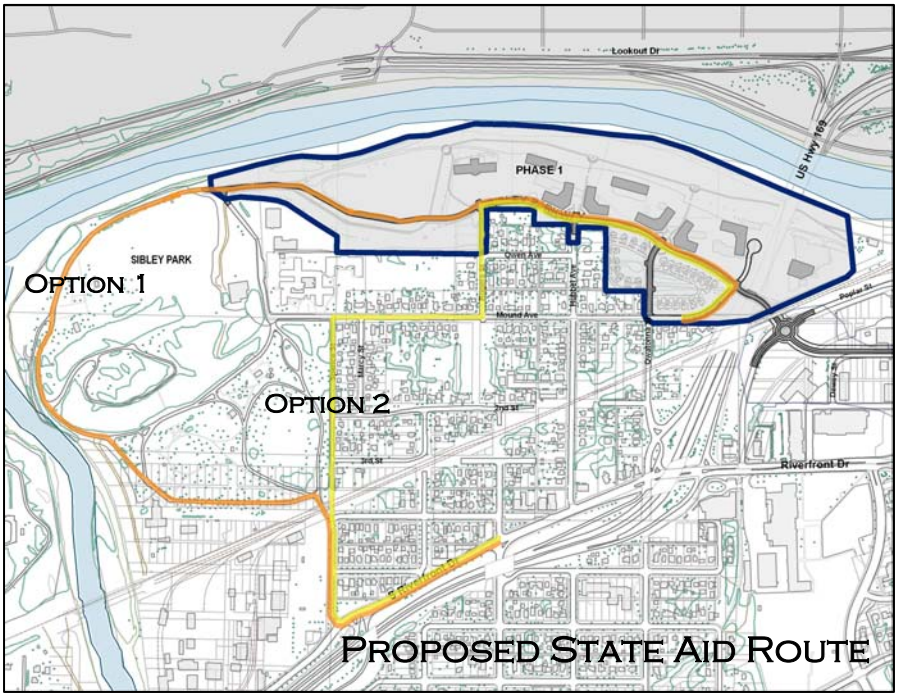
Parkway and Streetscape Features

The proposed design of the Parkway reflects the multiple goals the redevelopment of the area strives to achieve. The nature and feel of the built environment shapes the vitality and identity of the entire neighborhood. As a collector street, and 'Main Street' for the redevelopment area, the Parkway provides the linkages connecting the existing neighborhood to the mixed-use 'river-town center' and Riverfront Drive, and creates a new gateway to Sibley Park.

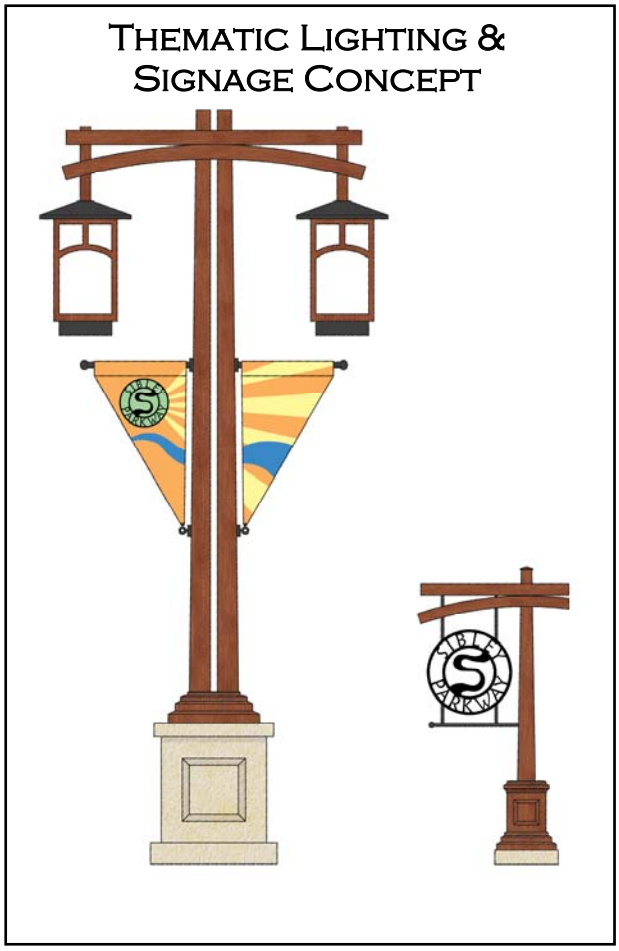
The Parkway design incorporates a walkable street layout and continuous green space for biking and walking trails. Secondary street connections facilitate movement throughout the neighborhood while decreasing the demands on Sibley Parkway as the main thoroughfare system. Design elements including large boulevards, sidewalks, crosswalks, decorative and directional lighting, banners, street furniture, directional signage, and significant shade trees will be used to shape the area's pedestrian character.

The overall design and alignment of the parkway is critical for its users and related land uses. An alignment that promotes longer radii and shorter tangents will create a more aesthetically pleasing streetscape for residents, pedestrians, cyclists and motorists. The proposed Parkway will have a typical 60-foot Right-of-Way with a 28-foot roadway, which is considerably narrower than the City's typical roadway width of 36 feet. This narrower width and curvature is a traffic calming measure that tends to reduce speeds.

It is the City's intention to include all, or a portion of the Parkway in the Minnesota State Aid Street System (MSAS). The figure below shows two alternatives for the potential MSAS designation. All portions of the Parkway designated as part of the MSAS must be designed to state aid standards. The 28-foot width is allowed provided the City Council adopts a resolution prohibiting parking, except where parking bays are provided. Parking bays are proposed at three locations along the south side of the parkway.



Enhanced landscaping, thematic lighting, and signage evoke a sense of the park reaching out into the community. A defined streetscape also establishes a sense of identity for both the Redevelopment Area as well as Sibley Park. With an identifiable corridor, a sense of connectedness and character will be evident throughout the Redevelopment Area.



On both the north and south sides of the Parkway, generous green spaces are provided within the boulevards. Tree plantings, enhanced landscaping treatments, and decorative lighting standards provide a common theme to the streetscape and aid in creating the traditional neighborhood/river town atmosphere.

The south side of the parkway features an 8-foot boulevard adjacent to the curb to accommodate the planting of trees and landscaping features. An 8-foot multi-use bituminous trail will be located between the boulevard and the south edge of the Parkway Right-of-Way. This will allow for circulation movement by pedestrians, cyclists, and other non-motorized users. At several locations, parking bays are provided, replacing the boulevard green space and bringing the parking bay adjacent to the bituminous trail.

The multi-use bituminous trail on the south side of the parkway provides access to the park at the west end and connects to the Red Jacket Trail at the east end. Sidewalks provided along the existing neighborhood streets link to the trail, and encourage pedestrian access to the parkway and the adjacent mixed-use areas. These connections not only link the neighborhood to the City's larger trail system, they create an essential mode of access to the 'river-town center' for residents.

The boulevard on the north side of the parkway will be utilized more intensively for landscape purposes, with boardwalks and sidewalks provided within the mixed use, commercial, and public use areas. Most of the northern boulevard area will be green space with planting areas for turf and trees as well as rainwater gardens and bio-filtration/retention areas. A sidewalk will be provided along the north side of the Parkway as well, possibly as part of the construction of the Parkway. Alternatively, to avoid damage to the sidewalk during the redevelopment of the areas north of the Parkway it could be built after most of the redevelopment construction has been completed. Costs for construction of the sidewalk are included as an alternate in the Parkway cost estimate (Appendix C).

Storm Water Management

With the exception of the LSP, runoff from the project area currently drains to a large diameter trunk storm drain that runs along the base of the flood control levee. The construction of the Parkway and Redevelopment Area will require additional storm drains to provide adequate drainage. These drains will be constructed in conjunction with the Parkway, and will be directed to the existing trunk storm drain. Exhibits A4 and A5 in Appendix A show the existing and proposed storm drain systems.

Runoff from the LSP portion of the project area currently ponds in the LSP and discharges to the river via an existing storm drain outlet. This outlet is equipped with a shutoff valve to prevent backflow into the LSP from the river during periods of high water. The proposed grading in the LSP area will eliminate the current outlet. Catch basins will provide drainage for the parkway and will discharge runoff to bio-filtration areas in the newly created green space. These bio-filtration areas and buffer strips will slow the flow of runoff and allow suspended sediments to settle out prior to reaching the river.

As previously noted, most of the Redevelopment Area was once used as a ready mix concrete plant, and is a mix of hard surface and aggregate surface that has been compacted by heavy vehicle traffic over the years. It is not anticipated that the proposed future use will contribute significantly to an increase in the existing impervious surface amounts. As such, construction of the Parkway will not require additional water quality ponding. However, non-traditional water quality Best Management Practices (BMPs) such as rainwater gardens, bio-filtration, and bio-retention will be utilized to provide water quality treatment benefits.

Rainwater Gardens, Bio-retention/filtration

Rainwater gardens and bio-retention/filtration have become popular water quality Best Management Practices (BMPs) for a number of reasons. Not only can they be an attractive addition to the landscape, they provide water quality benefits by infiltrating runoff rather than discharging untreated stormwater to our rivers and lakes.

Due to very impermeable soils throughout most of the Mankato Area, it has been difficult to incorporate alternative treatment methods such as rainwater gardens. However, the soil conditions present at this site should allow for effective use of them.

Rainwater Garden in Maplewood, Minnesota

At first glance, a rainwater garden is simply a shallow depression with ornamental plantings that receives stormwater runoff via sheet flow, curb cuts, or storm drains. Typically, the garden is designed to pond about one-foot of water, although it can be more or less depending on the soil conditions. This ponded water is infiltrated into the ground, which aids in groundwater recharge and filtering out pollutants.

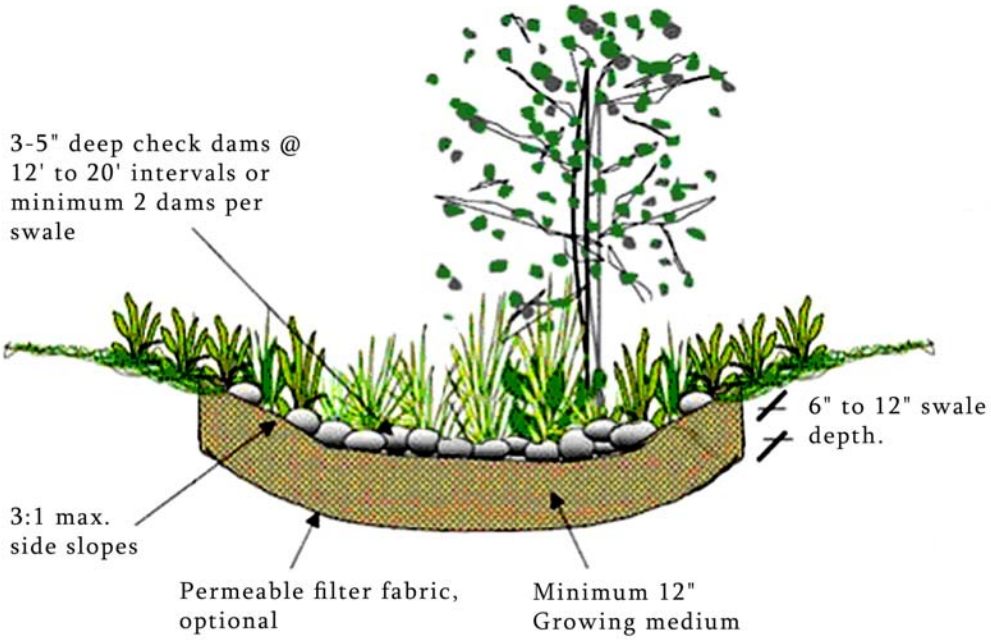
The plants in a rainwater garden are key to its operation. The plants chosen are often deep-rooted, native varieties. Not only do the plants take up water for growth, the root systems aid in aerating the soil and enhancing the ability of the soil to infiltrate stormwater. The uptake of water and nutrients by the plants is known as bio-retention/filtration.

Buffer strips utilize the same principle of bio-retention/filtration as rainwater gardens do. Buffer strips can be employed as either a pre-treatment BMP prior to discharging to another BMP (rainwater garden, pond, treatment structure), or as a buffer just prior to discharge into the receiving water body.

Both rainwater gardens and buffer strips allow for the use of native plantings. Once established, native plantings require no fertilizers, and less pesticides and maintenance. It also creates the opportunity to bring some of the native landscape into the urban environment and park/open space setting. Extensive use of rainwater gardens is planned for the north boulevard area adjacent to the parkway. The design of the gardens will be determined by the characteristics of the soils, the desired streetscape/landscape motif, and the storm drain system design.

Since the LSP area is considered a solid waste disposal site, infiltration is not desirable. Instead, shallow, broad channels planted with native vegetation called vegetated swales will provide bio-filtration by utilizing dissolved nutrients in the stormwater and trapping suspended sediments. Buffer strips planted along the River provide additional bio-filtration prior to the stormwater entering the River. The figure on the right presents a conceptual rendering of the LSP stormwater management areas.

Vegetated Swale Detail



Sanitary Sewer and Watermain Improvements

Sanitary sewer and water service must be provided to the entire Redevelopment Area adjacent to the Phase I East Alignment. Although there are sanitary sewer laterals in place at the north ends of Hubbell Avenue and Rogers and Owatonna Streets, these stubs are quite shallow. If extended, these stubs can only provide service portions of the project area, mainly those south of the Parkway. The figure below illustrates the potential service areas for the Hubbell Avenue and Rogers and Owatonna Street sanitary sewer extensions.

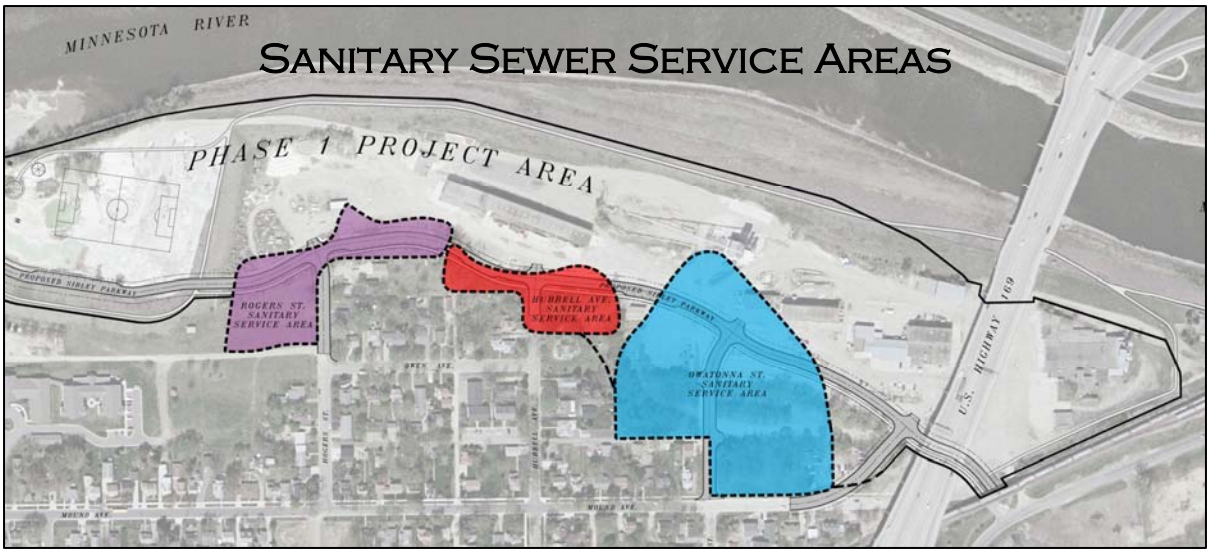


Exhibit A6 (Appendix A) shows the existing and proposed sanitary sewer and water systems. The proposed sanitary sewer is a 12-inch gravity main, which can be installed at a flatter grade. By extending a larger pipe from the deeper sanitary manhole located at the intersection of Mound Avenue and the Union Pacific Railroad, the proposed sewer can provide sanitary sewer service to the entire project area. However, for portions of the area (north of the Parkway and west of Hubbell Street) the sewer will not be deep enough to accommodate full basements at all lots because of the topography of the site and its proximity to the River. In these areas, a full basement would require the placement of significant amounts of fill.

The proposed water supply system features three eight-inch watermain extensions; one from the intersection of Rogers and Owen Avenue, one from the intersection of Owatonna Street and Mound Avenue, and one from Mound Avenue near the Union Pacific Railroad Bridge. These extensions will provide service to the proposed single family residential areas, and will be extended to the north side of the parkway to serve the mixed use and public use areas. Looping of the watermain will be required to be completed internally on the development sites north of the parkway.

Wellhead Protection and Water Treatment Plant Security Considerations

The City's water treatment facility is located at the west end of the proposed Sibley Parkway at the entrance to Sibley Park. Planned improvements to the facility are currently being constructed including two new buildings, membrane filtration process equipment, and two new wells with associated piping. These improvements reflect a major expansion of the City's water supply infrastructure.

City wells #5 and #16 are located in close proximity to the treatment facility. Well #5 was an existing city well that has been capped and taken out of service. Well #16 is one of the new wells constructed as part of the current infrastructure improvements.

The construction of the Sibley Parkway in close proximity to this critical infrastructure raises two major issues that need to be addressed; the first is related to security for the facility itself, and the second is protection of the City's water supply, or wellhead protection. Per George Rosati, Director of Public Works for the City, for security reasons and wellhead protection any road constructed adjacent to the water treatment facility must be a minimum of 80 feet from any of the buildings or wells. In addition, with the proposed Parkway following the crest of the levee adjacent to the facility, there is the possibility of a vehicle leaving the road and colliding with well #16, possibly contaminating the city's water supply that must be addressed

Exhibit A2 (Appendix A) shows the proposed Parkway alignment in the area adjacent to the water treatment facility. The minimum distance proposed from the edge of the road to existing or planned facilities is 126 feet. Given the side slopes of both the existing levee and the proposed embankment extensions to accommodate the Parkway and relocation of the existing trail, some form of traffic barrier is warranted from a traffic safety standpoint alone. Possibilities include both guardrails and jersey barriers to prevent vehicles from leaving the roadway. City Engineer Ken Saffert indicated that jersey barriers would be the preferred option from the engineering department's perspective. Jersey barriers can be pre-cast, slip-formed or extruded, or formed and poured in place. The pre-cast or poured in place options would allow the use of a form liner to give the appearance of stone, similar to the retaining walls recently constructed in Sibley Park.

Cost Estimates

The estimated costs for construction of Phase 1 of Sibley Parkway are summarized as follows:

Estimated Construction Costs – Phase 1 East	$ 1,424,500
Estimated Construction Costs – Phase 1 West	$ 834,200
Estimated Total Construction Costs – Phase 1	**$2,258,700**

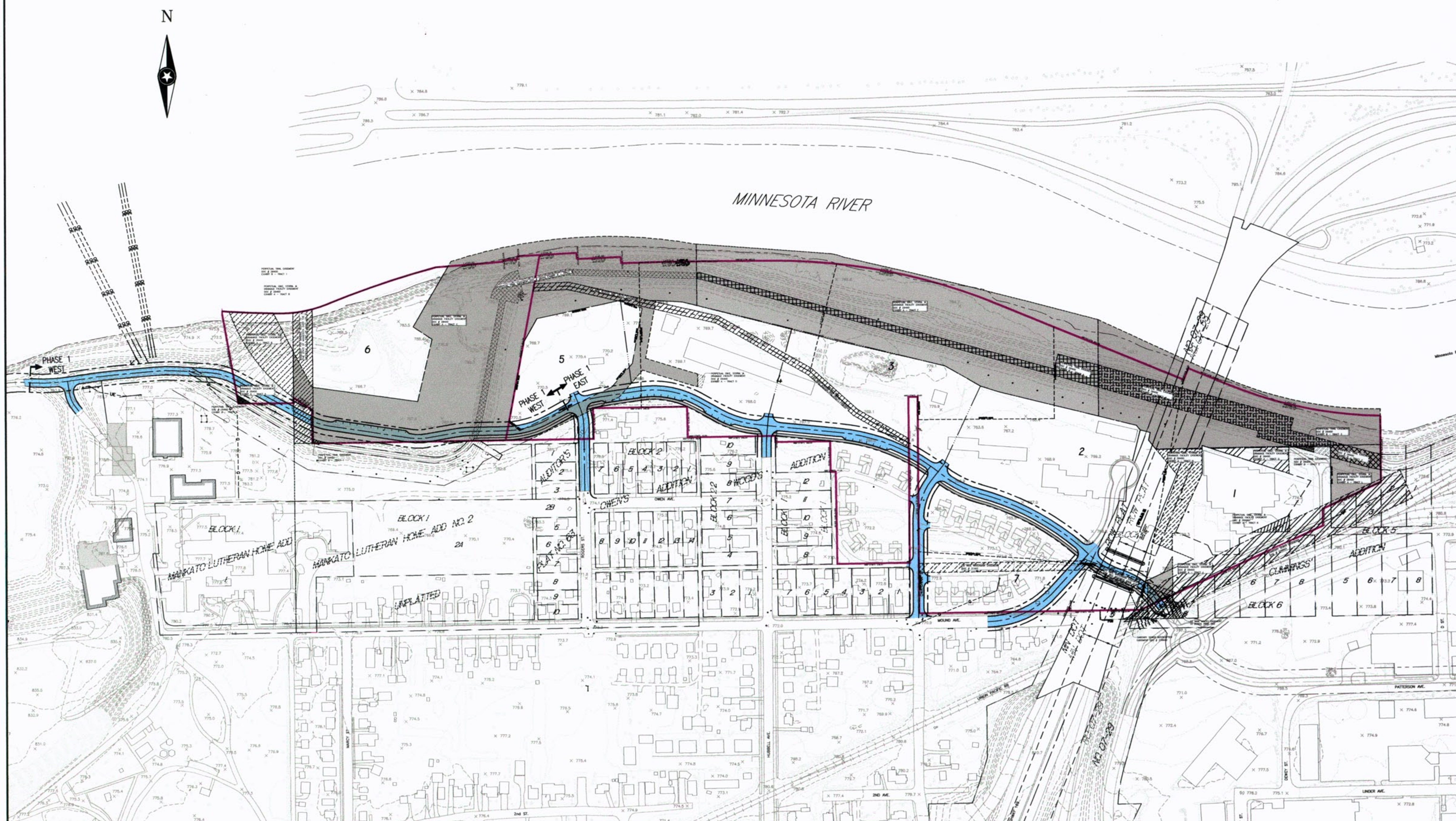
These cost estimates cover construction of the Parkway, utilities, curb and gutter, multi-use trail construction, and grading and restoration of the LSP area. They include estimated costs for thematic signage, decorative lighting, and enhanced landscaping for Phase 1 East, and a receptor survey and relief well alterations for Phase 1 west.

Detailed preliminary cost estimates are included as Appendix C of this report. Separate cost estimates are provided for Phase 1 East (Parkway alignment east of, and including the Rogers Street Intersection) and Phase 1 West (the remainder of the alignment connecting to Sibley Park). The cost estimates are broken down further into separate costs for street, sanitary sewer, watermain, storm drain and lighting and landscaping improvements.

The estimated costs presented above assume that any sludge excavated to widen the levee embankment to accommodate the road will remain on site and be capped in place. It further assumes that none of the excavated material will be trucked off site. In addition, although the cost estimates for Phase 1 West include costs for capping the LSP, it should be noted that at this point the applicable regulatory agencies have not yet given their full approval for the plan. Coordination with these agencies will need to be maintained as the design moves forward.

APPENDIX A

Exhibits 1-7



Eng. Proj. No.		SAP Proj. No.	
City Proj. No.		Federal Proj. No.	
County Proj. No.		CAD File Name	
CSAH Proj. No.			

City of MANKATO
ENGINEERING DEPARTMENT

I&S Engineers & Architects, Inc.
One firm - start to finish

Offices in Mankato and Faribault, Minnesota
Mankato: 507-387-6651
Faribault: 507-331-1500
Web: www.is-ea.com

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DATE ____________ LIC. NO. ____________

REVISIONS

SCALES: 0 150 HORIZ. VERT 0

EXHIBIT A-I
EXISTING EASEMENTS
SIBLEY PARKWAY
MANKATO, MN

SHEET 1 OF 7 SHEETS

MINNESOTA RIVER

PHASE 1 WEST

EXISTING WELL #5

PROPOSED SIBLEY PARKWAY

LIME SLUDGE POND

SIBLEY PARK ROAD

WATER TREATMENT PLANT EXPANSION

EXISTING WELL #16

EXISTING UTILITY BUILDING

EXISTING GARAGE

EXISTING WASTE HANDLING BUILDING

EXISTING WATER TREATMENT BUILDING

N

140.3'

138.1'

138.7'

126.2'

BASEBALL

BLOCK 1

MANKATO LUTHERAN HOME ADD

MANKATO LUTHERAN HOME ADD

Eng. Proj. No.		SAP Proj. No.	
City Proj. No.		Federal Proj. No.	
County Proj. No.		CAD File Name	9396 Base
CSAH Proj. No.			–option–B

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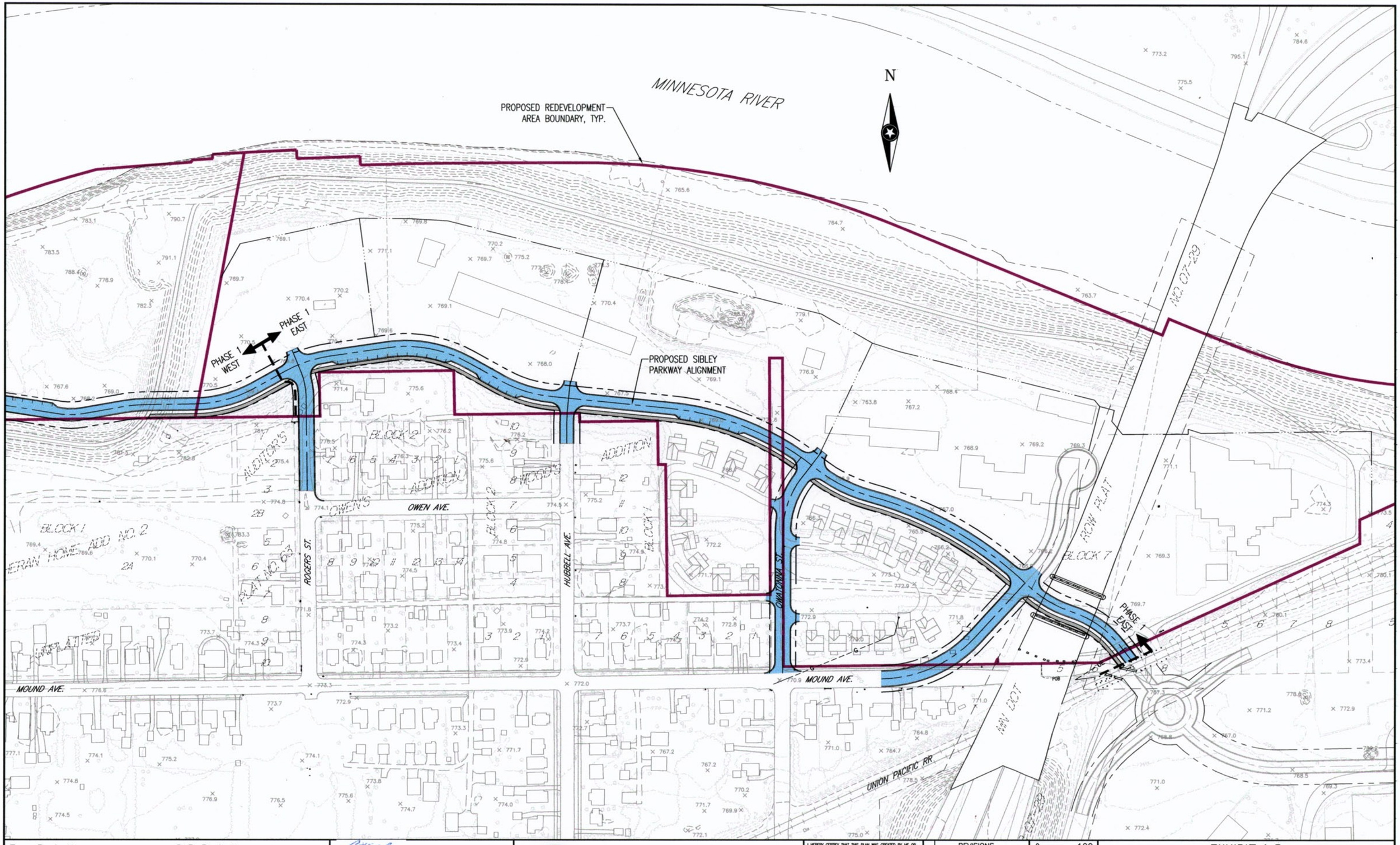
REVISIONS

SCALES: HORIZ. 0 40 — VERT. 0 —

EXHIBIT A-2
WELL HEAD PROTECTION (PHASE I - WEST)
SIBLEY PARKWAY
MANKATO, MN

SHEET 2 OF 7 SHEETS



Eng. Proj. No.		SAP Proj. No.	
City Proj. No.		Federal Proj. No.	
County Proj. No.		CAD File Name	9396 Base
CSAH Proj. No.			–option–B

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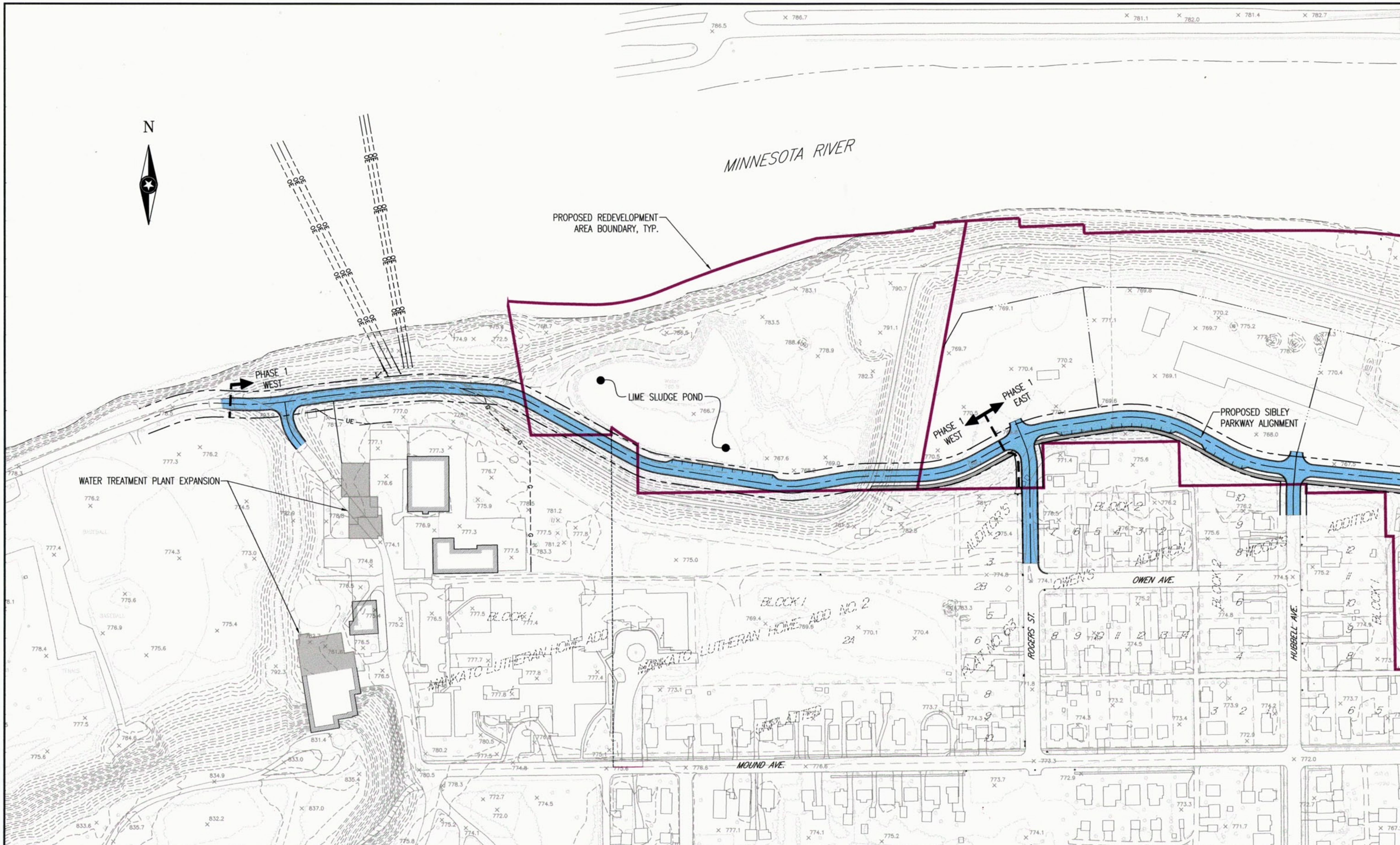
REVISIONS

SCALES: HORIZ. 0 100 — VERT. 0

EXHIBIT A-3
PHASE I - EAST
SIBLEY PARKWAY
MANKATO, MN

SHEET 3 OF 7 SHEETS



Eng. Proj. No.		SAP Proj. No.	
City Proj. No.		Federal Proj. No.	
County Proj. No.		CAD File Name	9396 Base
CSAH Proj. No.			-option-B

City of MANKATO ENGINEERING DEPARTMENT

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DATE ________ LIC. NO. ________

REVISIONS

SCALES: HORIZ. 0 100 VERT 0

EXHIBIT A-4
PHASE I - WEST
SIBLEY PARKWAY
MANKATO, MN

SHEET 4 OF 7 SHEETS

MINNESOTA RIVER

U.S. HIGHWAY 169

EXISTING 24" STORM

EXISTING 21" STORM

EXISTING 15" STORM

EXISTING 60" STORM

EXISTING 72" STORM

EXISTING 24" STORM

PROPOSED SIBLEY PARKWAY

EXISTING 72" STORM

PROPOSED 24" STORM

PROPOSED 24" STORM

PROPOSED 18" STORM

PROPOSED 15" STORM

PROPOSED 15" STORM

EXISTING 60" STORM

PROPOSED 18" STORM

OWEN AVENUE

ROGERS STREET

EXISTING 18" STORM

EXISTING 54" STORM

UNION PACIFIC R.R.

EXISTING 58" STORM

PROPOSED 24" STORM

POPLAR STREET

EXISTING 60" STORM

MOUND AVENUE

HUBBELL AVE.

OWATONNA ST.

N

Eng. Proj. No.	06-9396	SAP Proj. No.	
City Proj. No.		Federal Proj. No.	
County Proj. No.		CAD File Name	9396 BASE
CSAH Proj. No.			

City of MANKATO ENGINEERING DEPARTMENT

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CHARLES J. VERMEERSCH

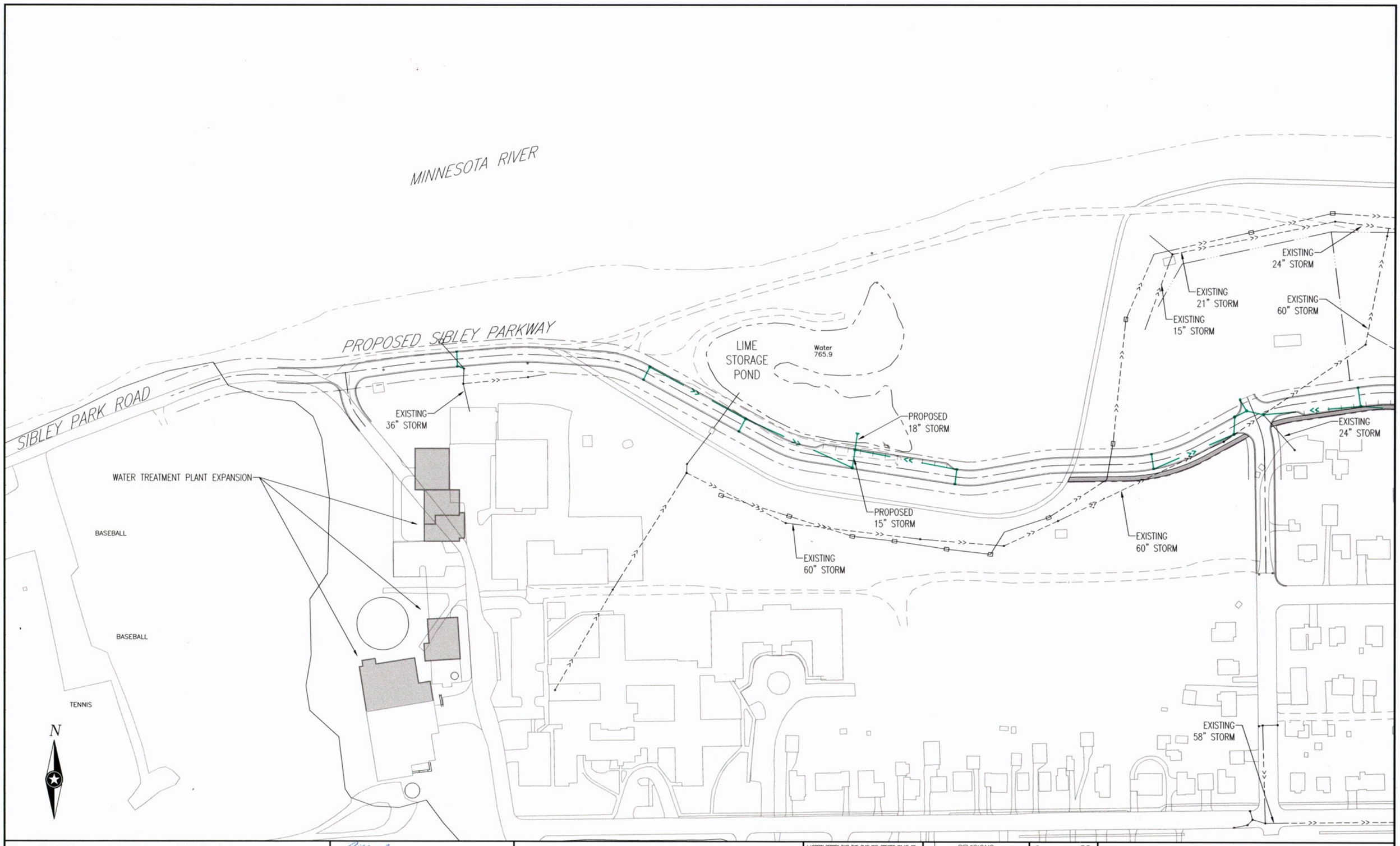
DATE _____ LIC. NO. 43842

REVISIONS

SCALES: HORIZ. 0 80; VERT. 0 40

EXHIBIT A-5
STORM DRAIN SYSTEM (PHASE I EAST)
SIBLEY PARKWAY
MANKATO, MN

SHEET 5 OF 7 SHEETS



Eng. Proj. No.	06-9396	SAP Proj. No.	
City Proj. No.		Federal Proj. No.	
County Proj. No.		CAD File Name	9396 BASE
CSAH Proj. No.			

Mankato — Engineering Department

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CHARLES J. VERMEERSCH

DATE _____ LIC. NO. 43842

REVISIONS

SCALES: HORIZ. 0 80 — VERT. 0

EXHIBIT A-6
STORM DRAIN SYSTEM (PHASE I WEST)
SIBLEY PARKWAY
MANKATO, MN

SHEET 6 OF 7 SHEETS

PRO. SANITARY M.H.
R=775.0
I=761.4

PROPOSED
10" WATERMAIN

PROPOSED 8"
SANITARY

PROPOSED 12"
SANITARY

PRO. SANITARY M.H.
R=773.0
I=760.8

PROPOSED
8" SANITARY

MINNESOTA RIVER

U.S. HIGHWAY 169

PROPOSED SIBLEY PARKWAY

PRO. SANITARY M.H.
R=777.0
I=761.8

PRO. SANITARY M.H.
R=770.0
I=760.0

PROPOSED
12" SANITARY

PRO. SANITARY M.H.
R=770.0
I=759.1

PROPOSED
8" SANITARY

PROPOSED
10" WATERMAIN

PRO. SANITARY M.H.
R=768.0
I=758.3

PRO. SANITARY M.H.
R=768.0
I=757.5

PROPOSED
12" SANITARY

PROPOSED
8" SANITARY

PRO. SANITARY M.H.
R=768.0
I=756.7

EXISTING 30" WATERMAIN

EXISTING 8" SANITARY

EXISTING 8" SANITARY

OWEN AVENUE

EXISTING 8" WATERMAIN

ROGERS STREET

EXISTING 8" SANITARY

EXIST. 8" WATERMAIN

EXISTING 6" SANITARY

EXISTING 4" WATERMAIN

EXISTING 30" WATERMAIN

PROPOSED
10" WATERMAIN

PRO. SANITARY M.H.
R=770.0
I=757.9

EXISTING
16" WATERMAIN
8" WATERMAIN

EXISTING
4" WATERMAIN
8" SANITARY

EXISTING 10" SANITARY

UNION PACIFIC R.R.

POPLAR STREET

EXISTING 16" WATERMAIN

EXISTING 8" WATERMAIN

MOUND AVENUE

EXISTING 18" SANITARY

EXISTING 24" SANITARY

EXISTING 24" SANITARY

EXISTING 16" WATERMAIN

EXIST. SANITARY M.H.
R=768.5
I=755.9

EXISTING 24" SANITARY

EXISTING 6" WATERMAIN

HUBBELL AVE.

EXISTING 10" SANITARY

EXISTING 8" WATERMAIN

OWATONNA ST.

N

Eng. Proj. No.	06-9396	SAP Proj. No.	
City Proj. No.		Federal Proj. No.	
County Proj. No.		CAD File Name	9396 BASE
CSAH Proj. No.			

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CHARLES J. VERMEERSCH

DATE _____ LIC. NO. 43842

REVISIONS

SCALES: HORIZ. 0 80 — VERT. 0

EXHIBIT A-7 (PHASE I EAST)
SANITARY SEWER & WATERMAIN SYSTEMS
SIBLEY PARKWAY
MANKATO, MN

SHEET 7 OF 7 SHEETS

APPENDIX B

Recommendations Section of Phase I Investigation
Hanson Pipe Products

AMERICAN ENGINEERING TESTING, INC.

CONSULTANTS
- GEOTECHNICAL
- MATERIALS
- ENVIRONMENTAL

PHASE I
ENVIRONMENTAL SITE ASSESSMENT
HANSON PIPE AND PRODUCTS
240 MOUND AVENUE
MANKATO, MINNESOTA

AET #08-04356

Date:

October 21, 2002

Prepared for:

Central Concrete, Inc.
Attn: Steve Rentz
1316 N Broad Street
Mankato, MN 56001

St. Paul, MN
Duluth, MN
Mankato, MN
Marshall, MN
Rochester, MN
Wausau, WI
Rapid City, SD
Beresford, SD
Pierre, SD

As stated within the body of this report, containers from 55-gallon drums to pint capacity have been observed at various locations on the PROPERTY. In some cases these materials are being utilized during daily activities at the PROPERTY. Disposal of these containers and/or the materials within them could be an expense for the new owner.

Conclusions and Recommendations

We have performed a Phase I ESA in conformance with the scope and limitations of ASTM: E 1527-00 of the PROPERTY. This assessment has revealed no evidence of recognized environmental conditions in connection with the PROPERTY, except for the following:

- One (1) former 10,000 gallon, diesel fuel and one (1) former 10,000 gallon, gasoline tank were located in two (2) separate basins's north of Building #4 (Mechanic Shop). Based on this information, AET would recommend advancing one (1) soil boring within the limits of each basin to obtain information on the degree of petroleum impacts remaining in soils and ground water at these locations.

- The EDR report indicates that the LeHillier/Mankato site has impacted the city of Mankato well field, the Blue Earth River and the Minnesota River. Based on this information, AET would recommend advancing, two (2) soil borings along the western boundary of the PROPERTY (assumed up-gradient direction) to obtain information on the likelihood that impacted ground water is flowing onto the PROPERTY.

- Visual evidence of chronic release was observed in the vicinity of the form oil drum observed west of Building #7 (Batch Plant). Based on this information, AET would recommend that one (1) soil boring be placed at this location to obtain information on impacts to soils and ground water (if encountered) at this location.

- The above-ground storage tank east of Building #1 (Office and Pipe Production) was utilized for storage and dispensing of gasoline, no secondary containment was observed. Based on this information, AET would recommend that one (1) soil boring be placed at the location of this above-ground storage tank to obtain information on the presence or absence of petroleum impacts to soils and ground water at this location.

- No secondary containment was observed to be associated with the two (2) above-ground storage tanks observed in Building #4 (Mechanic Shop) (hydraulic fluid and motor oil). If these above-ground storage tanks are to remain at the PROPERTY, AET would recommend that secondary containment be installed beneath the above-ground storage tanks. This containment should have a capacity of 110% of the largest storage tank located within the containment.

- No secondary containment was observed in the vicinity of the 500 gallon, anti-freeze above-ground storage tank observed in the garage on the southwest corner of Building #4 (Mechanic Shop). If this tank is to remain in use. AET recommends that secondary containment be added to the storage tank. As stated above, the secondary containment should contain 110% of the volume of the largest above-ground storage tank within the containment.

- No secondary containment was observed in the vicinity of the 6,000 gallon, diesel fuel, above-ground storage tank at the 560 gallon, gasoline, above-ground storage tank located north of Building #4 (Mechanic Shop). The dispensing hoses are located on the opposite ends of the tank area. Based on this information, AET would recommend one (1) soil boring be placed at each end of this tank area at the approximate location that vehicles are filled to obtain information on the likelihood of soil and ground water impacts resulting from the presence and use of these above-ground storage tanks at the PROPERTY. If these above-ground storage tanks are to remain in operation, AET would recommend that secondary containment be installed to contain 110% of the largest tank located within the containment.

- No secondary containment was observed to be associated with the 1,400 gallon, fuel oil, above-ground storage tank observed within Building #6 (Boiler Room). Based on this information, AET would recommend that if this above-ground storage tank is to remain in use at the site, secondary containment be added to the tank. The secondary containment should contain 110% of the largest tank located within the containment.

- The surface staining observed at the location of the hydraulic fluid reservoir at Building #5 represents a recognized environmental condition. Based on this information, AET recommends advancing one (1) soil boring to obtain information on the degree of impacts to both soils and ground water at this location. In addition, if this hydraulic equipment is to remain in operation, AET recommends that secondary containment be installed to contain 110% of the tank contents.

- The containers observed at various locations throughout the PROPERTY (55-gallon drums to pint containers, both aerosol and non-aerosol) do represent a recognized environmental condition to the PROPERTY at this time, as well as additional cost to a new owner should they be left behind. Based on this information, AET recommends that all containers that will not be utilized on the PROPERTY be removed from the PROPERTY and properly disposed.

- Due to the sheen observed on the surface of the water observed in the below floor pit observed in the pipe production area (Building #1), AET would recommend that this water be sampled for the presence of petroleum impacts and one (1) soil boring be advanced down-gradient of Building #1 to provide information on potential impacts to ground water resulting from this process.

- The floor staining observed at the used oil receptacle on the west side of the new portion of Building #4 (Mechanic Shop) does represent a recognized environmental condition to the PROPERTY. Based on this information, AET recommends that one (1) soil boring be advanced along the exterior of the building opposite the wall from this used oil receptacle to obtain information on the likelihood that petroleum impacts to soils and ground water exist at this location. In addition, if this receptacle is going to continue to be used, AET recommends that sorbent materials be utilized to clean this area and that the structure be re-engineered to accommodate this activity and reduce the potential for the chronic releases currently occurring at the PROPERTY.

- The surficial staining observed on the south exterior of Building #8 (Prestress) does represent a recognized environmental condition at this time. Based on this information, AET recommends that one (1) soil boring be advanced at the location of each staining location to obtain information on the degree of impacts to soils and the potential for impacts to ground water at the PROPERTY.

- The former operation of paint booths and sand blasting activities do present a recognized environmental condition. Based on this information, AET recommends that composite soil samples be obtained from the surface soils to the north, east and south of the concrete pad on the east side of Building #4 (Mechanic Shop), the south side of the concrete pad accessing the paint booth, the south side of Building #4 (Mechanic Shop), the north, west and south sides of the concrete pad on the west end of Building #4 (Mechanic Shop), on the north, west and south sides of the concrete pad on the west of Building #6 (Boiler Room), and south of the concrete pad accessing the paint booth in Building #6 (Boiler Room). These soil samples should be obtained from the 0" to 6" and 2' to 2 ½' below grade interval and analyzed for solvents and total heavy metals as an indication of impacts resulting with these former activities at the PROPERTY.

- Due to the unknowns associated with the maintenance pit, AET would recommend that a hole be cored in the floor near the maintenance pit and a soil boring be advanced to a depth below the bottom of the pit to obtain both soil and ground water samples to provide information on the likelihood of petroleum impacts at this location. In addition, it appears that effluent from this pit was pumped and discharged the south side of Building #6 (Boiler Room). Based on this information, AET would recommend that a composite soil sample be obtained from both the 0" to 6" interval and the 2' to 2 ½' interval to the south of this garage door to obtain information on the likelihood of impacts at this location.

- Due to the unknowns associated with the area of subsidence observed on the east side of Building #1, AET recommends performance of one (1) soil boring at this location to obtain information on the likelihood of petroleum or solvent impacts to soils and ground water at this location.

- Due to the unknowns associated with the former quarry at the west end of the PROPERTY and the fill materials utilized, AET would recommend advancing six (6) soil borings at random locations throughout the west end of the PROPERTY to obtain information on the types of fill material as well as the potential impacts to ground water that may exist from the fill materials.

- No information has been obtained which would indicate the former 10,000 gallon, fuel oil, under-ground storage tank associated with Building #6 (Boiler Room) has released fuel oil to the subsurface. Based on this information, AET would recommend performing one (1) soil boring within the boundaries of this former underground storage tank to obtain information on the likelihood of impacts to soils and ground water at the PROPERTY.

- No information has been obtained which would indicate the former 10,000 gallon, unleaded gasoline, underground storage tank did not release to the subsurface. Mr. Allen indicated this underground storage tank was located in the same basin as the diesel fuel underground storage tank, reported to have been removed from the PROPERTY. No mention of this tank was observed in the reports provided by Hanson Concrete. Based on this information, AET recommends performance of one (1) soil boring within this underground storage tank basin to provide information on the likelihood of petroleum impacts to soils and ground water which may have resulted from the former presence and use of this tank.

- No information has been obtained which would indicate that the former used oil underground storage tank, reported to have been located on the south side of Building #4 (Mechanic Shop), did not release to the subsurface. Based on this information, AET recommends that one (1) soil boring be placed within the used oil underground storage tank basin to obtain information on the likelihood the petroleum impacts to soils and ground water at the PROPERTY.

- As previously stated, "de mininus" petroleum staining was observed on both interior and exterior concrete surfaces. Although not currently thought to be recognized environmental conditions for the PROPERTY, AET recommends that sorbent materials be utilized to clean these "de mininus" releases.

- The unregistered well should be abandoned or registered.

Appendix C

Cost Estimates

I&S Engineers & Architects, Inc.
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Web: www.is-ea.com
Architectural Structural Civil Mechanical Electrical Natural Resources Interior Design Land Surveying

SIBLEY PARKWAY PHASE 1 EAST

COST ESTIMATE

June 15, 2006

ITEM No.	CONSTRUCTION ITEM	UNIT	QUANTITY	UNIT PRICE	AMOUNT
	Street Construction and Grading				
2021.501	MOBILIZATION	LS	1	$ 25,000.00	$ 25,000.00
2104.503	REMOVE CONCRETE CURB AND GUTTER	LF	2400	$ 2.00	$ 4,800.00
2104.503	REMOVE BITUMINOUS PAVEMENT	SY	4500	$ 4.00	$ 18,000.00
2105.501	COMMON BORROW(CV)	CY	7300	$ 8.50	$ 62,050.00
2105.501	COMMON EXCAVATION (EV)	CY	7500	$ 2.15	$ 16,125.00
2211.503	AGGREGATE BASE, PLACED MnDOT CL. 5	CY	2600	$ 17.00	$ 44,200.00
2211.503	AGGREGATE BASE, PLACED MnDOT CL. 3	CY	3900	$ 15.00	$ 58,500.00
2350.604	TYPE MV 3 WEARING COURSE MIXTURE, 2" THICKNESS (P)	SY	12900	$ 5.50	$ 70,950.00
2350.604	TYPE MV 3 NON-WEARING COURSE MIXTURE, 2" THICKNESS (P)	SY	12900	$ 5.00	$ 64,500.00
2502.541	6" PERFORATED PIPE DRAIN W/ FILTER AGGREGATE	LF	2000	$ 9.00	$ 18,000.00
2521.600	PEDESTRIAN CURB RAMP	EA	16	$ 450.00	$ 7,200.00
2521.603	10' BITUMINOUS TRAIL W/6" CL5 BASE	SY	1700	$ 12.00	$ 20,400.00
2531.501	CONCRETE CURB & GUTTER, DESIGN B6-18	LF	6700	$ 9.50	$ 63,650.00
2573.502	SILT FENCE, TYPE PREASSEMBLED	LF	1500	$ 1.70	$ 2,550.00
2573.512	INLET PROTECTION	EA	12	$ 250.00	$ 3,000.00
2575.501	SEEDING, MnDOT TYPE 260 W/ FERTILIZER AND MULCH	AC	1.16	$ 2,000.00	$ 2,320.00
2575.505	SODDING, TYPE LAWN AND BOULEVARD	SY	1500	$ 3.75	$ 5,625.00
				Street Construction & Grading Sub-Total	$ 486,870.00
				10% Contingency	$ 48,690.00
				City Additive 14% (Includes engineering, administrative, staking, and inspection)	$ 74,980

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Architectural Structural Civil Mechanical Electrical Natural Resources Interior Design Land Surveying

SIBLEY PARKWAY PHASE 1 EAST

COST ESTIMATE

June 15, 2006

Storm Drain							
2503.511	12" STORM SEWER	LF	1400	$	21.00	$	29,400.00
2503.511	15" STORM SEWER	LF	725	$	25.00	$	18,125.00
2503.511	18" STORM SEWER	LF	142	$	30.00	$	4,260.00
2503.511	24" STORM SEWER	LF	730	$	34.00	$	24,820.00
2503.600	GRANULAR PIPE FOUNDATION	CY	500	$	14.00	$	7,000.00
2506.501	CONSTRUCT DRAINAGE STRUCTURE, TYPE I CATCH BASIN	LF	150	$	170.00	$	25,500.00
2506.501	CONSTRUCT DRAINAGE STRUCTURE, MnDOT 4020-48"	LF	100	$	190.00	$	19,000.00
2506.503	RECONSTRUCT DRAINAGE STRUCTURE	LF	12	$	200.00	$	2,400.00
2506.516	CASTING ASSEMBLY, NEENAH R-3246 W/ TYPE V GRATE	EA	40	$	475.00	$	19,000.00
2506.516	CASTING ASSEMBLY, MnDOT 700-7 W/ 715 COVER	EA	6	$	400.00	$	2,400.00
					Storm Drain Sub-Total	$	151,905.00
					10% Contingency	$	15,200.00
					City Additive 14% (Includes engineering, administrative, staking, and inspection)	$	23,400

Watermain							
101	CONNECT TO EXISTING WATERMAIN	EA	3	$	600.00	$	1,800.00
102	6" WATERMAIN	LF	300	$	23.00	$	6,900.00
103	8" WATERMAIN	LF	1210	$	23.00	$	27,830.00
105	6" GATE VALVE	EA	4	$	850.00	$	3,400.00
106	8" GATE VALVE	EA	8	$	1,150.00	$	9,200.00
107	RELOCATE EXISTING HYDRANT	EA	4	$	2,050.00	$	8,200.00
108	5"x7-5" HYDRANT	EA	4	$	2,050.00	$	8,200.00
109	WATERMAIN FITTINGS	LB	3220	$	5.00	$	16,100.00
112	GRANULAR PIPE FOUNDATION	CY	150	$	14.00	$	2,100.00
					Watermain Sub-Total	$	83,730.00
					10% Contingency	$	8,380.00
					City Additive 14% (Includes engineering, administrative, staking, and inspection)	$	12,900

Sanitary Sewer							
201	CONNECT TO INPLACE SANITARY SEWER	EA	1	$	650.00	$	650.00
202	8" PVC SANITARY SEWER PIPE, SDR 35	LF	200	$	26.00	$	5,200.00
203	10" PVC SANITARY SEWER PIPE, SDR 35	LF	1800	$	32.00	$	57,600.00
204	CONSTRUCT MANHOLE, DESIGN 4007G W/MECHANICAL JOINT	LF	130	$	175.00	$	22,750.00
205	CASTING ASSEMBLY WITH SELF SEAL COVER & INT. MANHOLE SEAL	EA	8	$	580.00	$	4,640.00
206	GRANULAR PIPE FOUNDATION	CY	400	$	14.00	$	5,600.00
207	8" PVC SANITARY SEWER PLUG	EA	6	$	50.00	$	300.00
					Sanitary Sub-Total	$	96,740.00
					10% Contingency	$	9,680.00
					City Additive 14% (Includes engineering, administrative, staking, and inspection)	$	14,900

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Architectural Structural Civil Mechanical Electrical Natural Resources Interior Design Land Surveying

SIBLEY PARKWAY PHASE 1 EAST

COST ESTIMATE

June 15, 2006

Decorative Lighting and Enhanced Intersection Landscaping					
301	FURNISH AND INSTALL LIGHTING STANDARD (INCLUDES CONDUIT AND WIRING)	EA	28	$ 4,800.00	$ 134,400.00
302	ELECTRIC SERVICE CABINET	EA	1	$ 7,000.00	$ 7,000.00
303	ENHANCED INTERSECTION LANDSCAPING	EA	4	$ 42,000.00	$ 168,000.00
				Lighting and Landscaping Sub-Total	$ 309,400.00
				10% Contingency	$ 30,940.00
				City Additive 14% (Includes engineering, administrative, staking, and inspection)	$ 47,650

Alternate for Construction of Sidewalk Along North Side of Parkway					
2521.501	5' CONCRETE WALK ON 5" SAND BASE	SF	10000	$ 3.75	$ 37,500.00
2521.600	PEDESTRIAN CURB RAMP	EA	16	$ 450.00	$ 7,200.00
				Lighting and Landscaping Sub-Total	$ 44,700.00
				10% Contingency	$ 4,470.00
				City Additive 14% (Includes engineering, administrative, staking, and inspection)	$ 6,890

Total Construction Costs - Sibley Parkway, Phase 1 East		
Item		**Amount**
Street Construction and Grading	$	610,600
Storm Drain	$	190,600
Watermain	$	105,100
Sanitary	$	121,400
North Side Sidewalk Alternate	$	56,100
Lighting and Landscaping	$	388,000
Total Estimated Construction Cost	**$**	**1,471,800**

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SIBLEY PARKWAY PHASE 1 WEST

COST ESTIMATE

June 15, 2006

ITEM No.	CONSTRUCTION ITEM	UNIT	QUANTITY	UNIT PRICE	AMOUNT
	Street Construction and Grading				
2021.501	MOBILIZATION	LS	1	$ 20,000.00	$ 20,000.00
2105.501	COMMON EXCAVATION, TOPSOIL STRIP (EV)	CY	1700	$ 2.15	$ 3,655.00
2105.501	COMMON BORROW (CV)	CY	7200	$ 8.50	$ 61,200.00
2105.501	COMMON EXCAVATION (EV)	CY	70800	$ 2.15	$ 152,220.00
2105.505	MUCK EXCAVATION (EV)	CY	26700	$ 4.00	$ 106,800.00
2211.503	AGGREGATE BASE, PLACED MnDOT CL. 5	CY	1300	$ 17.00	$ 22,100.00
2211.503	AGGREGATE BASE, PLACED MnDOT CL. 3	CY	1900	$ 15.00	$ 28,500.00
2350.604	TYPE MV 3 WEARING COURSE MIXTURE, 2" THICKNESS (P)	SY	6100	$ 5.50	$ 33,550.00
2350.604	TYPE MV 3 NON-WEARING COURSE MIXTURE, 3" THICKNESS (P)	SY	6100	$ 5.00	$ 30,500.00
2502.541	6" PERFORATED PIPE DRAIN W/ FILTER AGGREGATE	LF	1000	$ 9.00	$ 9,000.00
2521.600	PEDESTRIAN CURB RAMP	EA	4	$ 450.00	$ 1,800.00
2521.603	10' BITUMINOUS TRAIL W/6" CL5 BASE	SY	1100	$ 12.00	$ 13,200.00
2531.501	CONCRETE CURB & GUTTER, DESIGN B6-18	LF	3800	$ 9.50	$ 36,100.00
2533.504	CONCRETE MEDIAN BARRIER, DESIGN 8337	LF	1400	$ 50.00	$ 70,000.00
2573.502	SILT FENCE, TYPE PREASSEMBLED	LF	2100	$ 1.70	$ 3,570.00
2573.512	INLET PROTECTION	EA	1	$ 250.00	$ 250.00
2575.501	SEEDING, MnDOT TYPE 260 W/ FERTILIZER AND MULCH	AC	6	$ 2,000.00	$ 12,000.00
2575.505	SODDING, TYPE LAWN AND BOULEVARD	SY	900	$ 3.75	$ 3,375.00
				Street Construction & Grading Sub-Total	$ 607,820.00
				10% Contingency	$ 60,790.00
				City Additive 14% (Includes engineering, administrative, staking, and inspection)	$ 93,610

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SIBLEY PARKWAY PHASE 1 WEST

COST ESTIMATE

June 15, 2006

Storm Drain					
2503.511	12" STORM SEWER	LF	717	$ 21.00	$ 15,057.00
2503.511	15" STORM SEWER	LF	70	$ 25.00	$ 1,750.00
2503.511	18" STORM SEWER	LF	70	$ 30.00	$ 2,100.00
2503.600	GRANULAR PIPE FOUNDATION	CY	150	$ 14.00	$ 2,100.00
2506.501	CONSTRUCT DRAINAGE STRUCTURE, TYPE I CATCH BASIN	LF	40	$ 170.00	$ 6,800.00
2506.501	CONSTRUCT DRAINAGE STRUCTURE, MnDOT 4020-48"	LF	15	$ 190.00	$ 2,850.00
2506.503	RECONSTRUCT DRAINAGE STRUCTURE	LF	8	$ 200.00	$ 1,600.00
2506.503	RECONSTRUCT RELIEF WELL STRUCTURE	LF	24	$ 200.00	$ 4,800.00
2506.516	CASTING ASSEMBLY, NEENAH R-3246 W/ TYPE V GRATE	EA	10	$ 475.00	$ 4,750.00
2506.516	CASTING ASSEMBLY, MnDOT 700-7 W/ 715 COVER	EA	1	$ 400.00	$ 400.00
				Storm Drain Sub-Total	$ 42,207.00
				10% Contingency	$ 4,230.00
				City Additive 14% (Includes engineering, administrative, staking, and inspection)	$ 6,510

Receptor Survey					
100	RECEPTOR SURVEY	EA	1	$ 15,000.00	$ 15,000.00
				Receptor Survey Sub-Total	$ 15,000.00
				10% Contingency	$ 1,500.00
				City Additive 14% (Includes engineering, administrative, staking, and inspection)	$ 2,310

Total Construction Costs - Sibley Parkway, Phase 1West	
Item	**Amount**
Street Construction and Grading	$ 762,300
Storm Drain	$ 53,000
Receptor Survey	$ 18,900
Total Estimated Construction Cost	**$ 834,200**